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EXHAUSTION OF THE SOIL AND THE  
THEORY OF RENT

ELSEWHERE in this issue Professor Ellsworth Huntington discusses, from a geographer's point of view, the causes of agricultural decay and agrarian discontent in ancient Rome. His well-known contributions to geography and climatology entitle his opinions to most attentive consideration. The topic is of absorbing interest, and its importance for problems of economic history is patent. I would add a few words in regard to its bearing on questions of economic theory.

Of late years, several American writers have laid stress on the exhaustibility of the soil and on the relation of this possibility to the Ricardian theory of rent. Conspicuous among them is Professor Fetter. His view, familiar to economists, is that land differs in no essentials from instruments made by man; that it is not fixed in supply; and that it is subject to waste and deterioration like any other part of the apparatus of production. There is no such thing, according to him, as the "original and indestructible powers of the soil" which Ricardo mentions in the opening paragraphs of his chapter on rent; and for this reason, among others, there is need for radical reconstruction of the entire theory of rent and interest.<sup>1</sup>

I doubt, however, whether this particular ground for wholesale revision is tenable. The solution of the historical riddle does not seem to me of cardinal importance for the theory of rent, either by way of illustration or by way of proof. Neither is the validity of the accepted view of the chemists on the possible or probable depletion of the soil's mineral constituents of decisive theoretical significance. I say the accepted view, for doubtless it is still maintained by most agricultural chemists; tho there are dissidents whose opinions have weight. All this is

<sup>1</sup> Fetter, *Economic Principles* (1915), pp. 442-45.

of no vital concern for economic theory, whose essential postulates concerning land remain the same whether we accept or reject the principle of exhaustibility.

The fundamental question for the theory of rent is whether there are *permanent causes of difference* between soils. The gist of the Ricardian proposition and of the "orthodox" theory lies in the element of differentiation. As Ricardo himself said, in another passage of the much quoted chapter, "rent is always the difference between the produce obtained by the employment of two equal quantities of capital and labour." So long as there are causes which bring it about that some natural agents respond permanently to man's labor with greater output than other natural agents, the essentials of rent after the Ricardian fashion persist. Let it be admitted that some elements of fertility of the soil can be exhausted, and that these elements of fertility must be restored. Nevertheless, if the process of restoration and of the maintenance of fertility is one which yields larger returns on some lands than on others, we have the differential element. The *response* to man's action varies.

As Marshall and others have pointed out, there are unalterable differences in the annuities of sunshine, of heat and cold, of precipitation, received by different stretches of land.<sup>1</sup> These alone serve to bring about ineradicable differences. The same is true of variations in ease of working. The flat and well-watered prairies of Illinois, just as they will always be more fruitful than the semi-arid lands of the Rocky Mountain region, so will always be easier to till than the hillsides of New England. There are differences of a similar unalterable sort in the physical makeup of different soils — whether they are sandy, gravelly, loamy, rocky. There are differences in the flow of moisture through the soil and in the need of drainage. No doubt it is true, as Marshall remarks, that after long continued cultivation, these differences tend to become less than they were at the outset. The land of an old country comes to have a more homogeneous texture.

<sup>1</sup> See the admirable statement in Marshall's *Principles of Economics*, book IV, ch. ii, § 3 (p. 147, 6th edition).

But it is never reduced to complete homogeneity; differences persist.

For this reason it is immaterial whether land is or is not regarded as a fixed stock. Marshall sees in the circumstance of fixity an element of essential difference between land and instruments made by man. Professor Fetter seems to me more nearly in the right in maintaining that land is *not* a fixed stock. Land of any one particular kind or for any one particular use certainly cannot be said to be fixed in amount; urban sites, for example. Nor can it be said that the total stock of land in a given country, or even the total stock available for civilized man, is unchangeable in amount. True, the surface of the globe is fixed, and even the surface available for agricultural purposes. In an old country agricultural land is a limited space. Yet the "uses" of land in cultivation are susceptible of increase. So far as the economic supply is concerned, land may fairly be said to be flexible. But, to repeat, the supply, tho flexible, is by no means homogeneous, nor does it tend to become homogeneous. The differential element is not eliminated by man's use of the land.

Reference has been made to Ricardo's much quoted phrase, "the original and indestructible powers of the soil."<sup>1</sup> I suspect that the reason why Ricardo used the phrase and the point which he meant to bring out have been misunderstood. The emphasis should be on "soil," not on "indestructible powers." The phrase occurs in a passage which distinguishes between the rent of land and the rent of mines. As regards mines, Ricardo points out that "the compensation given for the mine or quarry is paid for the value of the coal or stone which can be removed from them, and has no connexion with the original and indestructible powers of the land." The owner of the mine does indeed receive a rent, as he explains in the next chapter (on the Rent of Mines); because some fixed stores of minerals are better than others. But the principles which are applicable to agricultural land, and especially "the laws which regulate the progress of

<sup>1</sup> Principles, ch. ii (p. 35 in McCulloch ed.).

[agricultural] rent and . . . profits," are based on the recurrent and continuous use of the land — that is, on "original and indestructible powers" such as do not exist in mines. "This is a distinction of great importance," says Ricardo, and it is this to which his discussion of indestructible powers is directed. As is indicated in the passage which I have quoted in a preceding paragraph, the essential of his reasoning about rent is that it constitutes a differential return. And the fundamental question regarding rent and interest, land and capital — a most complex question, on which one should speak with much reserve — is whether in fact there is a differential return from land of a kind which is not secured from "capital" in the sense of instruments made by man. As I have elsewhere stated, the answer depends on the effectiveness of competition in bringing about equality of return from concrete capital.<sup>1</sup> Discussion on the exhaustibility of the soil and the fixity of land supply helps us little on this cardinal question.

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## SOME CONSIDERATIONS ON LAND TAXATION

SINGLE taxers favor heavy land taxes and tax-free improvements in order to increase building, relieve congestion and lower rents. The argument is that one would not suffer for long a burdensome tax on a vacant lot; he would build and rent in order to recoup. "The owner of a vacant city lot," says Henry George, "would have to pay as much under a single tax for the privilege of keeping other people off of it until he wanted to use it, as his neighbor who has a fine house upon his lot. It would cost as much to keep a row of tumble-down shanties upon valuable land as tho it were covered with a grand hotel or a pile of great warehouses filled with costly

<sup>1</sup> See my *Principles of Economics*, ch. 46, § 3.